THE CALIFORNIA EARTHQUAKE AT UKIAH.

THE earthquake which wrought such destruction in San Francisco and Santa Rosa, on April 18, was very severe in Ukiah, 160 kilometers (96 miles) northwest of San Francisco. Many chimneys were thrown down from two-story buildings but cottages escaped without injury. One new brick store building, just nearing completion, was so badly cracked and thrown out of plumb that it is necessary to tear it down.

At the Latitude Station no damage whatever was done although the shaking was the most severe ever experienced by the writer. Dishes rattled, milk was spilled from pans but little more than half full, and fowls and other domestic animals were very much perturbed. There were a series of shocks and reliable estimates of their duration vary from twenty seconds to one minute. The general direction of the wave seemed to be from southwest toward the northeast, but others report a different direction. The Ukiah Valley is surrounded by mountains of considerable altitude and it is probable that some of the shocks felt were from waves reflected from the mountains. Hence it is that the earthquake is generally spoken of as a 'twister.'

The observatory clock was not stopped but it lost six seconds during the disturbance, which is equivalent to being stopped for that length of time and then set to going again. The observatory roof is built in two sections which roll upon horizontal tracks, east and west, giving an opening for observation of about 1.8 meters. When closed the two parts are fastened together by means of a hook and eye such as are used on screen doors. The hook rests in a horizontal position and the bend of the hook in a meridian plane. The effect of the earthquake was to unfasten this hook and open the roof to a width of about twenty centimeters, my recollection being that the eastern half was moved about twice as far as the western. The pier upon which the zenith telescope rests is apparently not damaged but the telescope was thrown considerably out of adjustment. It was out about fifteen seconds of arc in azimuth and the vertical axis was out in both directions, but not much more than sometimes results from extreme changes in temperature.

The first series of shocks was followed by three lighter ones and the observed data for each are as follows:

Pacific Stand. Time 1906 April					Duration.	Direction.	Intensity.
18d	5h	13m	00s	A.M.	About 40s	S.W. to N.E.	Severe.
18	10	4	39	A.M.	" 10	S.W. to N.E.	Medium.
18	11	36	00	A.M.	" 30	S.W. to N.E.	Light.
20	12	30	53	A.M.			Very slight.

The times are correct within two or three seconds.

I was in the observatory at the time of the second series of shocks, at $10^h\,4^m$, and perceived the effect of the movement in the striding level (east and west), of the zenith telescope. The bubble oscillated over about two divisions of the level. The value of one division is 2″.2 and as the distance between the east and west leveling screws of the instrument is about 42 centimeters, the disturbance produced in the bubble was equivalent to the effect of raising and lowering one of the leveling screws by 0.0005 centimeter. This shock was felt very distinctly and it is probable that the north and south component of the motion was much greater than the east and west one.

The fourth shock was not felt at all. It was detected during the progress of latitude observations by a movement of the bubbles of the latitude levels. The oscillation (north and south) was about one half of one division, and the value of one division is 1.0.

SIDNEY D. TOWNLEY.
INTERNATIONAL LATITUDE OBSERVATORY,
UKIAH, CALIFORNIA.

SCIENTIFIC BUILDINGS AND COLLECTIONS AT STANFORD UNIVERSITY.[1]

THE scientific laboratories and collections at Stanford University were but slightly injured by the recent earthquake in California. The buildings containing the departments of physiology, botany, zoology and entomology are uninjured structurally, and the apparatus

[1] We print this note, although it reduplicates to a certain extent the information communicated to us last week by President Jordan.